Department of Treasury's 15th Annual

Government Financial Management Conference

August 8-10, 2006

Data Analysis and Presentation

**Pamela Robinson, Financial Voyages, LLC.**

Presentation Overview

- **This presentation helps participants link an analytics strategy and monthly transactions.**

- **Participants learn useful shortcuts with Microsoft® functions and formulas to pinpoint performance deviations so that they can investigate the root cause and program impact.**

- **Participants also view different ways to use using charts, graphs, and tables to display analytical results.**

Learning Objectives

- **Assess the <u>root cause</u> of financial and performance deviations**

- **Extract and organize analytical data into <u>tables</u> and <u>graphs</u> in Microsoft® Excel and PowerPoint**

- **Differentiate between <u>one-time events</u> and <u>recurring events</u> and how to respond to each**

- **Apply useful Microsoft Excel <u>functions</u> and <u>formulas</u>**

- **Write useable <u>impact statements</u> that influence resource allocation decisions**

There is an increasing demand for more predictive analytics…

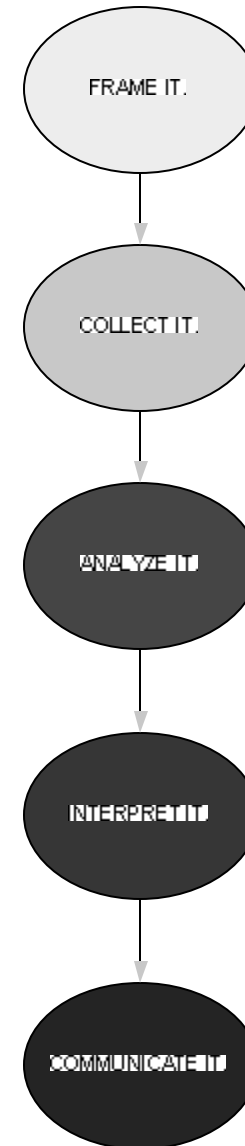| Historical Evidence | | Current Evidence | | Predictions for Future Desired Outcomes |
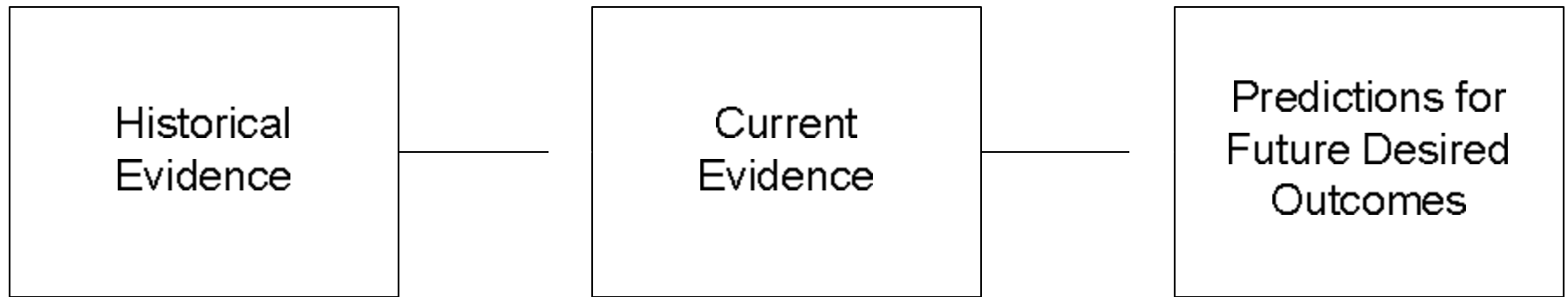
5-Phase Analysis Model

Phase 1 – Frame Problem/Opportunity

Phase 2—Data Collection

Phase 3—Construct Analysis

Phase 4—Perform Interpretation

Phase 5—Present Analytical Solutions

Framing Problems/Opportunities

- **Narrows the issue**

- **Identify the problem, the main focus**

- **Problem statements seemed to be the same for analysts and management—stating the problem helped narrow the focus of the analysis**

Data Collection

- **Only gather what you need to address the issue**

- **Stay focused on the problem and make sure it is the right one**

- **Need historical data and background information to solve the problem**

Analysis Phase

- **No right or wrong answer. Need at least 3 years of data to make a good analysis**

- **Pick out relevant data related to the problem**

- **Help make decision and identifies the problem area**

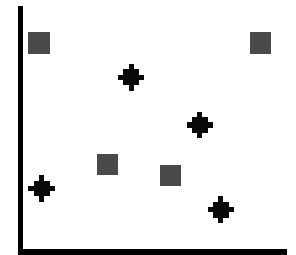# Interpreting

- **Translate data and separating facts and assumptions**

- **Help make decision and identifies the problem area**

- **Interpret information by using percent and dollars variances to ask the related problem questions to the units.**

Presentation Phase

- **Telling the story. Communicate your point and defend your decisions.**

- **Construct various courses of action.**

- **Feedback; getting guidance**

- **Learn the proper order to present a brief and convince the decision maker of your recommended course of action.**

Chart Palette

Data Collection

```
┌──────────────┐        ┌──────────────┐
│  Frame the   │        │              │
│   Problem/   │        │ Chart Palette│
│ Opportunity  │        │              │
└──────┬───────┘        └──────────────┘
       │
┌──────┴───────┐
│              │
│   Data Set   │
│              │
└──┬────────┬──┘
   │        │
┌──┴─────┐  └────────────┐
│Descriptive│         ┌──┴─────────┐
│Statistics │         │ Inferential│
└──┬─────┘            │ Statistics │
   │                  └────────────┘
┌──┴──────────┐
│             │
┌───┴────┐  ┌─┴──────┐
│Measures│  │Measures│
│of Central│ │of     │
│Tendency │ │Variability│
└───┬────┘  └─┬──────┘
    │         │
    └────┬────┘
         │
   ┌─────┴─────┐
   │  Graphic  │
   │Representation│
   └───────────┘
```

Frame the Problem/ Opportunity

Chart Palette

Data Set

Descriptive Statistics

Inferential Statistics

Measures of Central Tendency

Measures of Variability
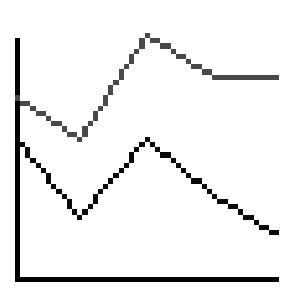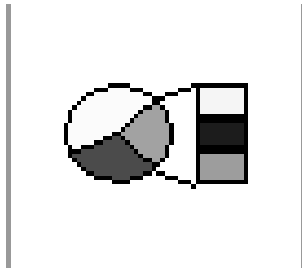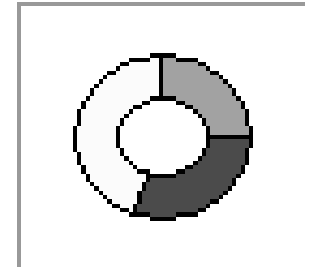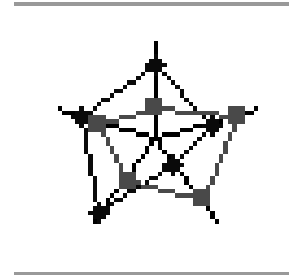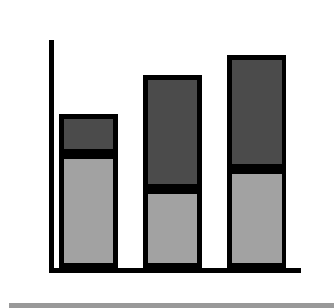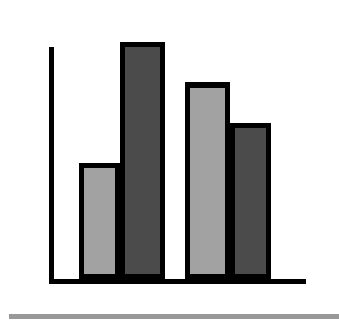
Graphic Representation

FY2007 Budget Analytical Perspectives Strengthening Federal Statistics

1. Bureau of Economic Analysis
2. Bureau of Justice Statistics
3. Bureau of Labor Statistics
4. Census Bureau
5. Energy Information Administration
6. Economic Research Service
7. National Agriculture Statistics Service
8. National Center for Education Services
9. National Center for Health Statistics
10. Office of Research, Evaluation and Statistics
11. Statistics of Income, Internal Revenue Service
12. Division of Science Resource Statistics

Functions

Syntax
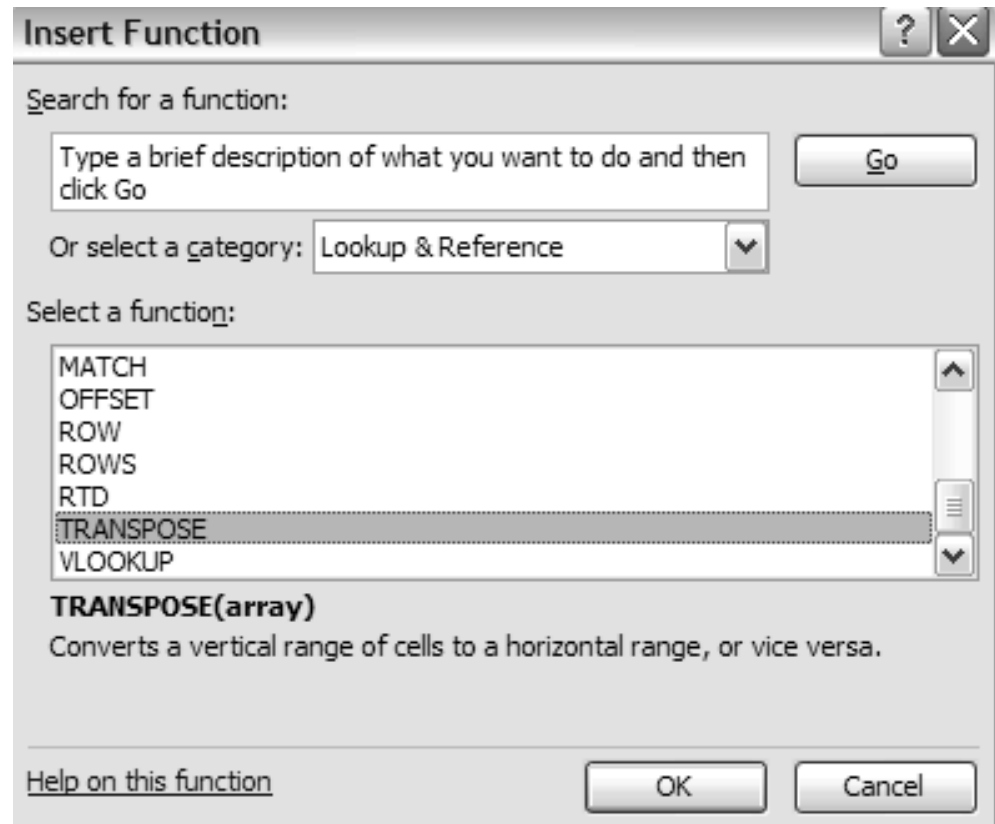
<u>D</u>ata Analysis <u>T</u>oolpak

Paste Special

	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total
Program 1	$100.00	$200.00	$300.00	$400.00	$1,000.00
Program 2	$150.00	$230.00	$320.00	$213.00	$913.00
Program 3	$170.00	$220.00	$310.00	$456.00	$1,156.00
Program 4	$190.00	$200.00	$132.00	$123.00	$645.00

	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total
Program 1	$100.00	$200.00	$300.00	$400.00	$1,000.00
Program 2	$150.00	$230.00	$320.00	$213.00	$913.00
Program 3	$170.00	$220.00	$310.00	$456.00	$1,156.00
Program 4	$190.00	$200.00	$132.00	$123.00	$645.00

Paste Special [?][X]

Paste

- ○ All
- ○ Formulas
- ⊙ Values
- ○ Formats
- ○ Comments

- ○ Validation
- ○ All except borders
- ○ Column widths
- ○ Formulas and number formats
- ○ Values and number formats

Operation

- ○ None
- ○ Add
- ○ Subtract

- ○ Multiply
- ⊙ Divide

☐ Skip blanks   ☐ Transpose

[Paste Link]   [OK]   [Cancel]

Paste Special

	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total
Program 1	10.0%	20.0%	30.0%	40.0%	100.000%
Program 2	16.4%	25.2%	35.0%	23.3%	100.000%
Program 3	14.7%	19.0%	26.8%	39.4%	100.000%
Program 4	29.5%	31.0%	20.5%	19.1%	100.000%

Paste Special

	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total
Program 1	$100.00	$200.00	$300.00	$400.00	$1,000.00
Program 2	$150.00	$230.00	$320.00	$213.00	$ 913.00
Program 3	$170.00	$220.00	$310.00	$456.00	$1,156.00
Program 4	$190.00	$200.00	$132.00	$123.00	$ 645.00

	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total
Program 1	10.0%	20.0%	30.0%	40.0%	100.000%
Program 2	16.4%	25.2%	35.0%	23.3%	100.000%
Program 3	14.7%	19.0%	26.8%	39.4%	100.000%
Program 4	29.5%	31.0%	20.5%	19.1%	100.000%

US Energy Consumption by Fuel
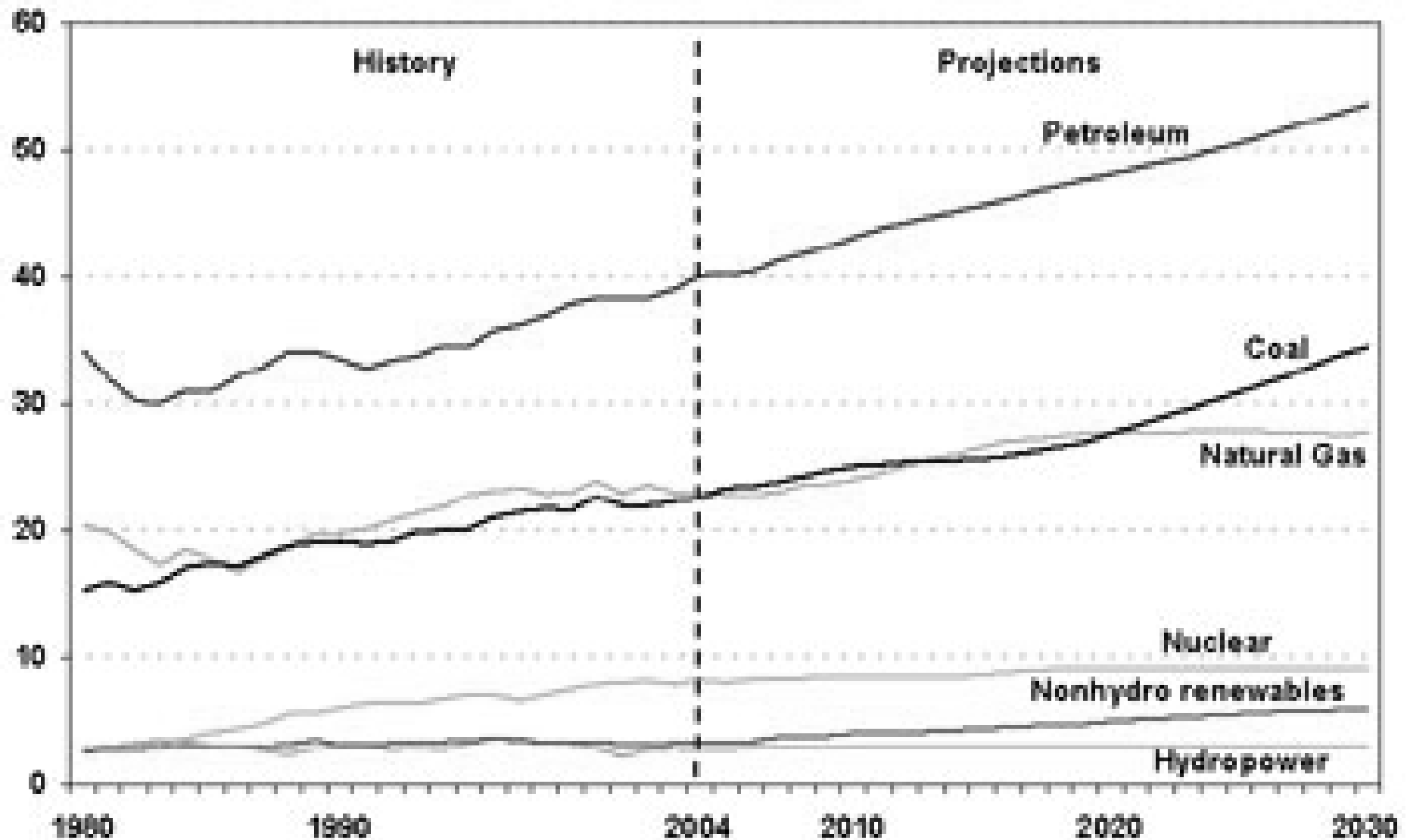
Tools for Presenting the Results of Your Analysis

	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
	Total														
	-4297														
e	87534														
	91831														
	2843														
e	90377														
	87534														
	-1389														
e	88988														
	90377														
	-2774														
e	84982														
	87756														
	-423														
e	84559														
	84982														
	-548														
e	84011														
	84559														
	2366														
e	86377														
	84011														
	-2843														
e	83534														
	86377														
	1389														
e	84923														
	83534														
	-4318														
e	80605														
	84923														
	3406														
e	84011														
	80605														

Pivot Table

nth

	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
ry	Revenue	Budget	Var											
	4000	5454	-1454											
la	3424	5341	-1917											
	8324	1232	7092											
e	5555	3424	2131											
la	5341	8324	-2983											
	1232	5555	-4323											
e	3424	5341	-1917											
la	8324	1232	7092											
	5555	3424	2131											
e	5341	8324	-2983											
la	1232	5555	-4323											
	3424	5341	-1917											
la	8383	5454	2929											
e	8324	1232	7092											
la	5555	3424	2131											
	5341	8324	-2983											
e	1232	5555	-4323											
e	3523	9295	-5772											
la	5555	3424	2131											
	5454	4000	1454											
	5341	8324	-2983											
e	1232	5555	-4323											
la	3424	5341	-1917											
	8324	1232	7092											
e	5555	3424	2131											
la	5341	8324	-2983											
	1232	5555	-4323											
e	3424	5341	-1917											
la	8324	1232	7092											
	5555	3424	2131											
	5341	8324	-2983											
la	9295	8383	912											
	1232	5555	-4323											
	3424	5341	-1917											
	8324	1232	7092											
	4000	3523	477											

PivotTable and PivotChart Wizard - Step 2 of 3

Where is the data that you want to use?

Range: $A$1:$F$208

Browse...   Cancel   < Back   Next >   Finish

Object

nth

	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
ry	Revenue	Budget	Var												
	4000	5454	-1454												
la	3424	5341	-1917												
	8324	1232	7092												
e	5555	3424	2131												
la	5341	8324	-2983												
	1232	5555	-4323												
e	3424	5341	-1917												
la	8324	1232	7092												
	5555	3424	2131												
e	5341	8324	-2983												
la	1232	5555	-4323												
	3424	5341	-1917												
la	8383	5454	2929												
e	8324	1232	7092												
la	5555	3424	2131												
	5341	8324	-2983												
e	1232	5555	-4323												
e	3523	9295	-5772												
la	5555	3424	2131												
	5454	4000	1454												
	5341	8324	-2983												
e	1232	5555	-4323												
la	3424	5341	-1917												
	8324	1232	7092												
e	5555	3424	2131												
la	5341	8324	-2983												
	1232	5555	-4323												
e	3424	5341	-1917												
la	8324	1232	7092												
	5555	3424	2131												
	5341	8324	-2983												
la	9295	8383	912												
	1232	5555	-4323												
	3424	5341	-1917												
	8324	1232	7092												
	4000	3523	477												

PivotTable and PivotChart Wizard – Step 3 of 3

Where do you want to put the PivotTable report?

○ New worksheet

○ Existing worksheet

Click Finish to create your PivotTable report.
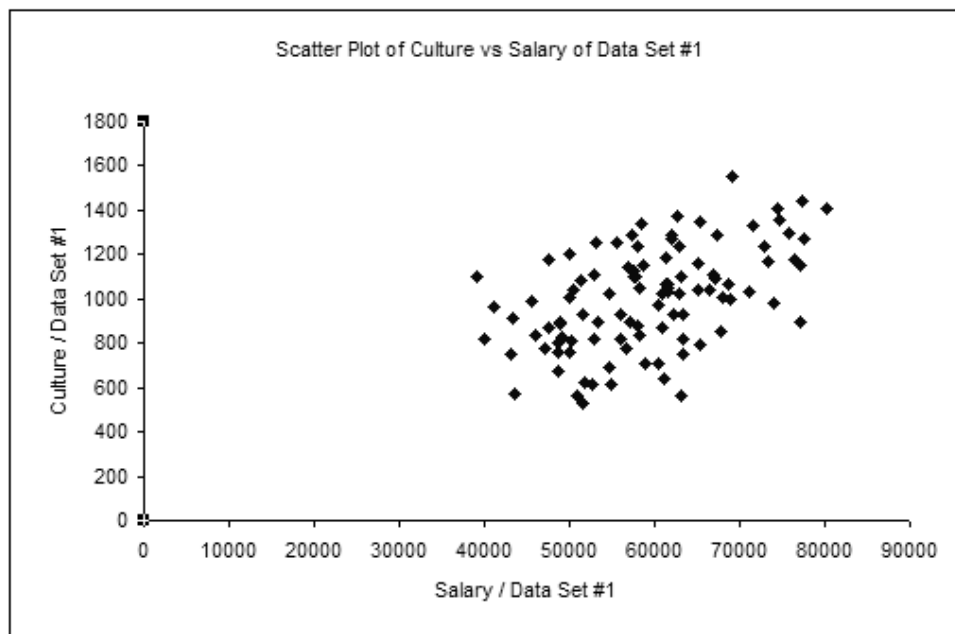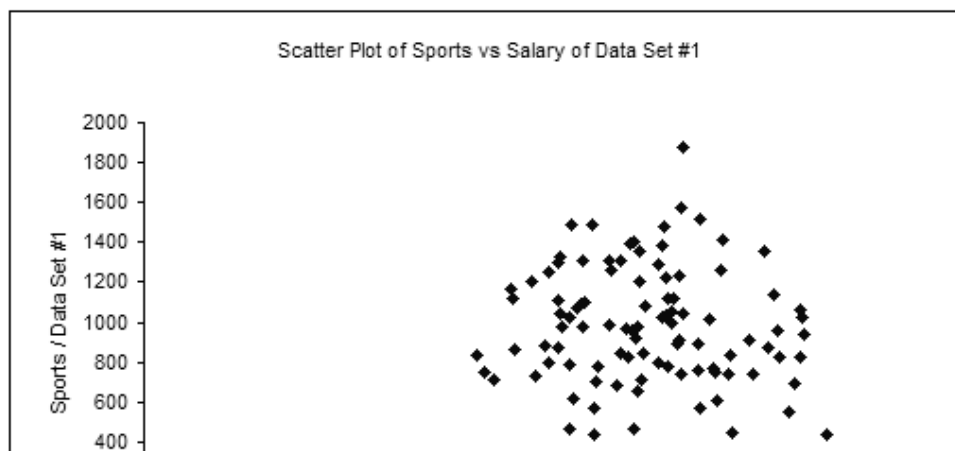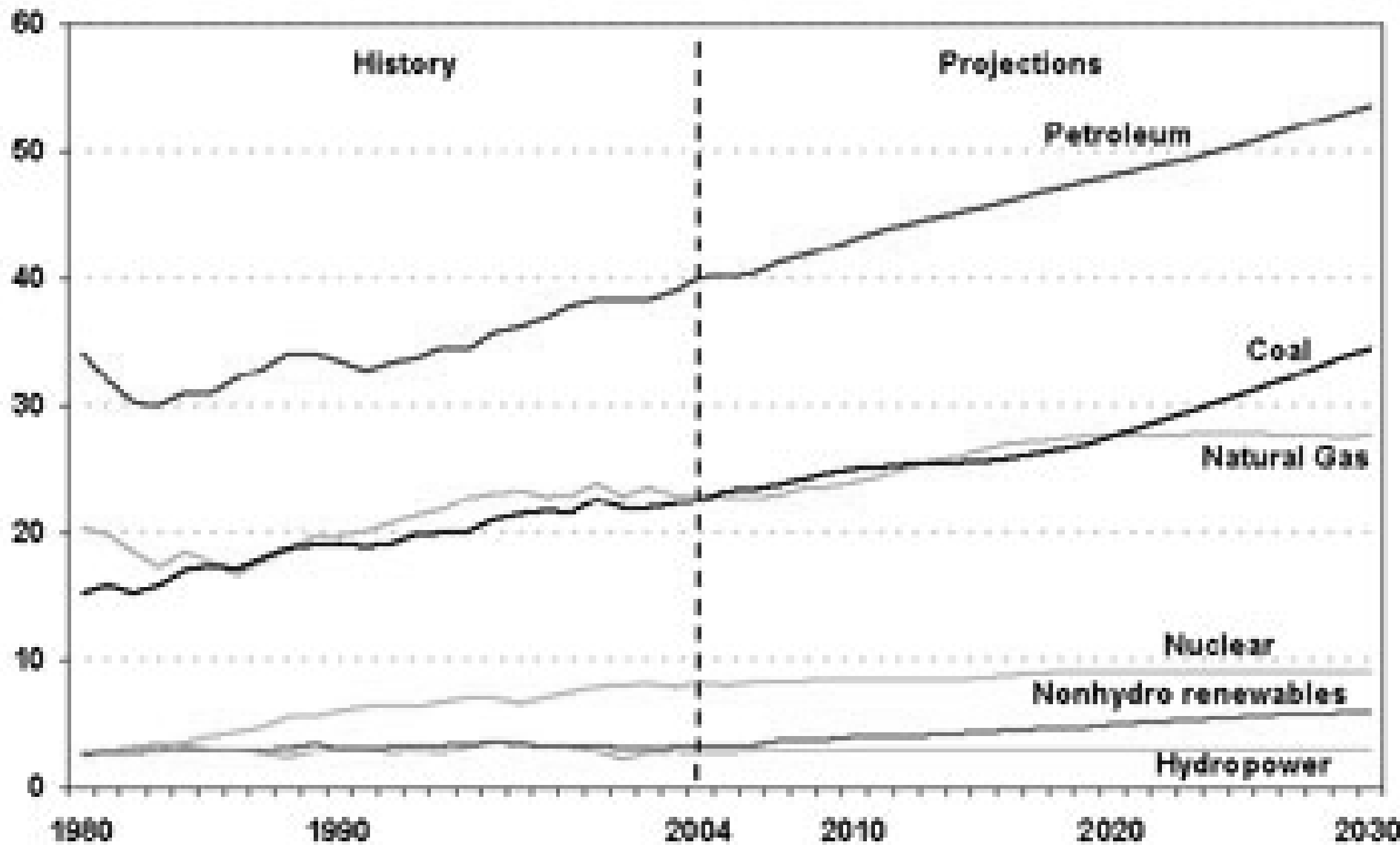
[Layout...] [Options...] [Cancel] [< Back] [Next >] [Finish]

Object

ERIES(Sheet7!$C$4,Sheet7!$A$5:$B$19,Sheet7!$C$5:$C$19,1)

134%

Total

Drop Series F

☐ Total

of Var | um of venue | Budget | of Var | um of venue | Budget | of Var | um of venue | Budget | of Var | um of venue | Budget

Object

	D	E
	Sports	Dining
	$990	$1,510
	$460	$1,180
	$780	$1,590
	$860	$1,750
	$1,390	$2,120
	$1,880	$3,090
	$710	$1,540
	$680	$1,800
	$1,220	$2,330
	$1,480	$2,670
	$820	$2,850
	$1,080	$2,200
	$1,230	$2,430
	$1,000	$2,110
	$690	$1,820
	$1,490	$2,100
	$730	$920
	$1,050	$2,480
	$970	$1,930
	$1,120	$1,720
	$1,570	$1,990
	$830	$1,420
	$1,260	$1,890
	$980	$1,470
	$1,300	$1,740
	$1,410	$3,100
	$1,520	$2,060
	$800	$1,920
	$1,140	$2,590
	$890	$2,110
	$1,360	$2,770
	$570	$1,890
	$750	$1,220
	$750	$1,690
	$1,290	$1,820

Scatter Plot of Culture vs Salary of Data Set #1

Correlation   0.506

Scatter Plot of Sports vs Salary of Data Set #1

2006 US Energy Consumption By Fuel

Presentation Recap

- **This presentation helps participants link an analytics strategy and monthly transactions.**

- **Participants learn useful shortcuts with Microsoft® functions and formulas to pinpoint performance deviations so that they can investigate the root cause and program impact.**

- **Participants also view different ways to use using charts, graphs, and tables to display analytical results.**

For additional information…

Contact:

Pamela Robinson,

Financial Voyages, LLC.

3340 Peachtree Rd., NE

Suite 1800

Atlanta, GA 30326

www.teamfv.com